WHAT IS CLAIMED IS:

1.   A method for converting an input digital color image having a set of possible input colors to an output digital color image having a set of palette colors, the number of palette colors being less than the number of possible input colors, wherein the set of palette colors is determined based on the distribution of colors in the input digital image supplemented by a distribution of important colors, comprising the steps of:

a)   determining the distribution of colors in the input digital color image;

b)   supplementing the distribution of colors in the input digital color image by a distribution of important colors;

c)   determining the set of palette colors to be used in the formation of the output digital color image responsive to the supplemented distribution of colors; and

d)   forming the output digital color image by assigning each color in the input digital color image to one of the colors in the set of palette colors.

2.   The method of claim 1 wherein the distribution of important colors includes a distribution of skin-tone colors.

3.   The method of claim 1 wherein the distribution of important colors includes a distribution of neutral colors.

4.   The method of claim 1 wherein the distribution of important colors includes a distribution of sky colors.

5.   The method of claim 1 wherein determining the supplemented distribution of colors is accomplished by appending additional pixels to the input digital color image to form an enlarged input digital color image, where the color of the additional pixels is distributed according to the distribution of important colors, and then determining the distribution of colors in the enlarged input digital color image.

6.   The method of claim 1 wherein the set of palette colors is determined using a sequential scalar quantization algorithm.

7.   The method of claim 6 wherein the sequential scalar quantization algorithm includes the steps of:

i)   sequentially partitioning the colors of the supplemented distribution of colors into a set of color space regions; and

ii)   determining the set of palette colors by selecting an output color for each color space region in the set of color space regions.

8.   The method of claim 7 further including determining the color value for each pixel of the output digital color image by identifying the palette color corresponding to the color space region containing the input color for the corresponding pixel of the input digital color image.

9.   The method of claim 1 wherein the set of palette colors is determined using a vector quantization algorithm.

10.   The method of claim 1 wherein the output digital color image is formed by assigning each color in the input digital color image to the

color in the set of palette colors having the smallest color difference relative to the color of the input digital color image.

11.   The method of claim 1 wherein step d) includes the use of a multi-level halftoning technique to assign each color in the input digital color image to one of the colors in the set of palette colors in such a way so as to approximately preserve the local mean color value.

12.   The method of claim 11 wherein the multi-level halftoning technique is an error diffusion technique that distributes the quantization errors introduced when processing an input pixel to nearby input pixels that have not yet been processed.

13.   The method of claim 1 wherein the distribution of important colors is only used to supplement the distribution of colors in the input digital color image in color regions where the input digital color image contains a significant number of pixels.

14.   A method for converting an input digital color image having a set of possible input colors to an output digital color image having a set of palette colors, the number of palette colors being less than the number of possible input colors, wherein the set of palette colors is determined based on the distribution of colors in the first digital image supplemented by a distribution of important colors, comprising the steps of:

a)   appending additional pixels to the input digital color image to form an enlarged input digital color image, where the color of the additional pixels is distributed according to the distribution of important colors;

b)   determining the distribution of colors in the enlarged input digital color image;

c)   determining the set of palette colors to be used in the formation of the output digital color image responsive to the distribution of colors in the enlarged input digital color image; and

d)   forming the output digital color image by assigning each color in the input digital color image to one of the colors in the set of palette colors.

15.   The method of claim 14 where the additional pixels are provided in the form of a predetermined target image.

16.   The method of claim 15 where the target image is resized to match the size of the input digital color image.

17.   A method for converting an input digital color image having a set of possible input colors to an output digital color image having a set of palette colors, the number of palette colors being less than the number of possible input colors, wherein the set of palette colors is determined based on the distribution of colors in the first digital image supplemented by a distribution of important colors, comprising the steps of:

a)   appending additional pixels to the input digital color image to form an enlarged input digital color image, where the color of the additional pixels is distributed according to the distribution of important colors;

b)   determining the distribution of colors in the enlarged input digital color image;

c) determining the set of palette colors to be used in the formation of the output digital color image responsive to the distribution of colors in the enlarged input digital color image;

d) forming an enlarged output digital color image by assigning each color in the enlarged input digital color image to one of the colors in the set of palette colors; and

e) forming an output digital color image by removing the additional pixels from the enlarged output digital color image.

18. A computer storage medium having instructions stored therein for causing the computer to perform the method of claim 1.